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ABSTRACT

In the 1960s suicide was the fifth leading cause of death among adolescents. In the 1980s suicide is second only to accidents as a cause of adolescent death. In their 1966 study of 50 adolescents who had attempted suicide, Teicher and Jacobs conceptualized suicide as the end product of progressive isolation from meaningful relationships. From early childhood on, the suicidal adolescent was seen to have a longstanding history of problems that escalated in adolescence, resulting in a progressive isolation from family and peers that eventually led to suicide attempts. Much of the research on attempted suicide in adolescence conducted during the past 20 years which used control groups for comparison has validated Teicher and Jacob's hypotheses. Research has supported the idea of a longstanding history of problems, differentiating suicide attempters from normal adolescents and from nonsuicidal depressed adolescents and those with other psychiatric problems. Specific discriminating variables include a greater likelihood among parasuicides of the loss of a parent through desertion, separation, or divorce, but not through death. There is also a probability of visual-motor learning disabilities, hyperactivity, and high level of psychosocial stress during the childhood of adolescents who attempt suicide. A trend toward more overall stress, poor problem-solving skills, family disruption, and peer isolation during their adolescence has been substantiated. (Methodological problems and directions for future research are discussed.) A 42-item reference list is included. (NB)

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TOWARD AN UNDERSTANDING OF ADOLESCENT PARASUICIDE

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of the Requirements for the Degree

Doctor of Psychology

by

Lynn Franklin Greenlee Jr.

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TOWARD AN UNDERSTANDING OF ADOLESCENT PARASUICIDE

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ABSTRACT

TOWARD AN UNDERSTANDING OF ADOLESCENT PARASUICIDE

Lynn Franklin Greenlee Jr.

The process underlying attempted suicide in adolescence is examined through a review of the empirical research. The conceptual framework for this review is drawn from the hypothesis initially posited by Teicher and Jacobs (1966) defining suicide as the end product of progressive isolation from meaningful relationships. Specifically, the processes leading to eventual suicidal action include a long-standing history of problems, an escalation of these problems with the onset of adolescence above what would normally be expected, and the failure of coping mechanisms with increased interpersonal isolation in the weeks and months preceding the attempt. The research on attempted suicide in adolescence done during the past two decades which utilized control groups is reviewed in order to confirm, disqualify, and extend our understanding of this process. It is concluded that the empirical research validates Teicher and Jacobs hypotheses. Methodological problems and directions for future research are also discussed.

Toward an Understanding of Adolescent Parasuicide

The act of suicide is an event that seems to challenge all efforts at understanding. When this ultimate deed of self-destruction is committed by an adolescent, the emotional reaction seems to intensify as witnessed by the general alarm across the United States and other countries to the recent increases in the adolescent suicide rate. To illustrate, between 1960 and 1980 the rate of completed suicide for 15-24 year olds increased 237 percent (Maris, 1985). While these rates have increased for both sexes the increase has been most dramatic with males, as the ratio of male to female suicides is 4:1. In addition, the adolescent suicide rate has moved from the fifth leading cause of death in the 1960's to the second leading cause of death, behind accidents, in the present decade (National Center for Health Statistics, 1982). Furthermore, an estimated 50 percent of all suicides are disguised as accidents (Toolan, 1975). When this is combined with the general reluctance to attribute the death of a child or adolescent to suicide for reporting purposes, it can be concluded with some assurance that official rates underestimate the magnitude of this phenomenon.

An examination of the research literature on adolescent suicide over the past 25 years reveals a concurring marked increase in the attempt to define, classify, and understand the processes that compel an adolescence to suicidal action. Indeed, adolescent suicide is considered by some to currently be the major issue in suicidology (Maris, 1985). While this is no doubt a function of the increased incidence rates noted above, the specialty coined "suicidology" is itself only in its adolescence (Berman, 1986). Consequently, we are just beginning to see a substantial body of research. The necessity of possessing a thorough knowledge of suicidal risk also has a very practical bearing, for suicidal expressions are considered by psychotherapists to be the most stressful of all communications from a patient (Deutch, 1984).

The vast majority of research on adolescent suicide has focused on suicide attempts (technically referred to as "parasuicide"). The reasons for this probably reside in the practicalities of locating a subject pool to study as adolescents who attempt suicide most often have contact with hospital emergency rooms or psychiatric treatment facilities and are more accessible to investigation. By contrast, the individual who successfully completes suicide is dead and therefore inaccessible, and the survivors are often quite resistant to an investigation because of the guilt and stigma associated with this act (Tuckman & Connon, 1962). Evidence for the pervasiveness of parasuicide can be seen in early estimates of 50 to 120 suicide attempts for every suicidal death (Jacobziner, 1960, 1965; Tuckman & Connon, 1962). More recently, Smith and Crawford (1986) found a similar ratio of 110 attempts to every completed suicide for 15-19 year olds who also received medical help . They also estimate that nationwide there are between 1.5 and 2.4 million suicide attempts by high school age individuals every year, representing between 8 and 13 percent of the total population of 15-19 year olds. With such a large number of adolescents attempting suicide every year the need to investigate parasuicide as a distinct phenomenon becomes even more pressing. Furthermore, it is this group of adolescents that mental health professionals are most likely to encounter.

Recognizing the serious nature of adolescent suicidal behavior, this paper will review the research on adolescent parasuicide conducted between 1966 and the present, utilizing only those studies that have incorporated control groups in the design. The decision to start at 1966 is guided by the fact that there were no controlled studies on adolescent parasuicide previous to this time. While there have been several previous reviews of the literature (Berman & Carroll, 1984; Berman & Cohen-Sandler, 1982; Petzel & Riddle, 1981; Sudak, Ford, & Rushforth, 1984), these works have either lumped together research findings with serious flaws making no attempt to address methodological problems, or simply made brief statements about findings with no attempt to synthesize the results in a coherent, meaningful manner.

The present review will utilize the landmark study by Teicher and Jacobs (1966) as a conceptual starting point in providing a contextual understanding of the suicidal process in adolescence. They conceptualized suicide as the end product of progressive isolation from meaningful relationships. Specifically, from early childhood on the suicidal adolescent is seen to have a long standing history of problems that escalates in adolescence. The effect of these escalating problems is a progressive isolation from family and peers that leads to suicidal action after all other efforts at coping fail. In this paper I will present the Teicher and Jacobs study in detail in order to lay the foundation for a review of the subsequent 20 years of research on adolescent parasuicide. The specific questions addressed will be; (1) to what extent do the conclusions of Teicher and Jacobs continue to hold true, (2) under what conditions, and (3) what more may be said about this process utilizing the burgeoning literature on adolescent suicide of the past 20 years.

Conceptual Overview

Before the Teicher and Jacobs (1966) study, which was later published in a more extensive book form by Jacobs (1971), none of the empirical research on adolescent suicide had utilized control groups. This alone made their investigation unique, although it is certainly not without methodological problems. Furthermore, they focused on the developmental history of the adolescent to provide an understanding of the processes that contribute to the proclivity toward suicidal behavior. Specifically, they addressed "the conscious deliberations of the adolescents and the process by which they are led to conclude that death is the only possible solution to life's problems" (Teicher & Jacobs, 1966, p. 1248). Their central hypothesis was that suicide is the end product of progressive isolation from meaningful relationships in which three essential elements are present: (a) A long-standing history of problems from childhood to the onset of adolescence, (b) an intermediate "escalation" stage of problems since the onset of adolescence above and beyond those usually associated with adolescence, and (c) a final

stage in which previously used adaptive coping mechanisms fail, leading to a dissolution of meaningful social relationships and the decision to commit suicide. Because this investigation lays the conceptual foundation for this paper, the methodology and findings will be reviewed in detail.

The sample consisted of 50 adolescents between the ages of 14 and 18 who were treated at the Los Angeles County General Hospital for an attempted suicide between September 1964 and May 1965. Teenagers who were "visibly pregnant" were excluded because of administrative constraints as were those determined to be "mentally retarded" as it was necessary to understand the interview procedures. All adolescents were on a 72 hour voluntary hold and participation in the study was voluntary. The parents of three of the adolescents refused to allow their children to participate, in two of the cases the teenagers were withdrawn from the hospital against medical advice.

Thirty-one adolescents from a suburban high school and their parents were interviewed as the control group. The study was presented to the student body as a "Study of Adolescence" and five dollars was given to those who voluntarily completed the interviews. The control group was matched with the experimental group on age, race, sex, and level of mothers education, providing a total of 31 matched pairs for analysis.

Each adolescent in the experimental group was interviewed 24-48 hours after the suicide attempt by a sociologist or research assistant and a psychiatrist. The interviewers utilized a structured schedule covering the suicide attempt, family relations, peer relations, attitudes and performance in school, and career aspirations. The parents were interviewed using a structured schedule covering their child's developmental history, and the identical schedules that had been completed by the adolescents covering behavioral problems and disciplinary techniques. Additional information from taped therapy sessions, suicide notes, and outside information was also included in the case histories. Only two fathers in the experimental group agreed to an interview so the data is limited

primarily to the perception of the mothers. The control group received the same interviews with the exception of the portion on the suicide attempt itself.

Findings

Characteristics of developmental history. Data on the history of the subjects was divided into two time periods: from birth to the onset of adolescence, and from the onset of adolescence to the time of the interview. Twenty-one categories of social-structural events that had been shown to previously be significant in the lives of suicide attempters in a pilot study were utilized to make comparisons (Jacobs, 1971). Because the author's primary interest resided in the nature, number, and ordering of life events as a process, individual statistical analyses for each of the categories was not done. Rather the absolute numbers of events in each of the categories for the two time periods were used in comparing events for the 31 matched pairs.

An overall trend was observed in which the suicide attempters experienced a greater number of debilitating events a greater number of times; however, the differences between the groups were much more pronounced during the second time period. Unfortunately, the authors do not provide a statistical analysis on how significant the differences were, although an examination of the numbers suggests the differences were negligible during the first time period, and quite pronounced in certain categories in the second. Specifically, during the first time period the experimental and control groups both had a similarly high number of residential and school changes. During the second period 29 of the 31 suicide attempters had experienced a move whereas 18 of the control adolescents had moved. A similar pattern was found with respect to the loss of a parent through death, separation, or divorce, heavy drinking by members of the family, and suicide attempts by family or friends. It seems that for the experimental group, not only did old problems continue in adolescence, but new ones were added. This was not true of the control group. Therefore, it was suggested that an escalation of problems

coincides with the onset of adolescence for suicide attempters above and beyond what would be normally expected.

In terms of events that occurred in the weeks and months preceding the suicide attempt, the experimental group had a much higher incidence of being institutionalized in Juvenile Hall or jail, dropping out or being suspended from school, having a serious romance end abruptly, suspecting or discovering pregnancy, and being hospitalized or experiencing a serious illness. These events are taken to indicate a progressive isolation from meaningful relationships that was not found in the control group.

Behavioral characteristics. Certain areas of the adolescents life were examined by Teicher and Jacobs in more detail to better delineate the process evident in the developmental data. In particular, behavioral problems were analyzed in terms of the number and kinds of problems as well as the discrepancy between child and parent perceptions.

By rank ordering the number of behavioral problems reported by both groups since the onset of adolescence, the Mann Whitney-U Test revealed significant differences between the groups ($p < .001$) as the suicide attempters experienced a 50% greater number of behavioral problems than the control group.

Three categories of behavior problems viewed by the authors as "adaptive techniques," were examined: Rebellion, Withdrawal into Self, and Physical Withdrawal. There were no differences between groups in the utilization of rebellious behaviors, however, the suicide attempters were more likely to engage in withdrawal behaviors. They displayed more gloominess ($p < .01$), more general withdrawal ($p < .001$) and more often ran away from home ($p < .001$) than the control group. This suggests an alienation from parents that is underscored by the fact that 70% of the suicide attempts took place in the home, often with the parents in the next room.

There was little difference between the parents and children of both groups regarding the number of behavioral problems. However, for both groups there was a

large difference between parents and childrens perceptions of which problems existed. Both groups of adolescents felt about 30% of the time that they were disciplined either for something they had not done or not disciplined for something they had done. Because the experimental group experienced 50% more behavioral problems they experienced inappropriate discipline more often than the control group.

Significant differences existed between groups with respect to the number of disciplinary techniques parents employed ($p < .01$) as the suicide attempters experienced 40% more disciplinary techniques than the controls. The average percent difference between the adolescents and parents regarding which techniques were used was 55% for the attempters and 36% for the controls. Approximately twice as many parents of the attempters used criticizing, nagging, yelling, withholding approval, or whipping and spanking. Nagging was the form of discipline most often used by the attempters parents, especially by the mother. Withholding privileges, considered by the attempters as "the worst" was most often used for serious infractions. Jacobs (1971) comments:

> The net result from the perspective of the suicide attempters was constant and inappropriate nagging, i.e., unfair discipline and rejection. The net result from the perspective of the parents was increased frustration, which in turn led to their attempting to reduce the dilemma by trying harder. . . . As a result, we see again how the suicide attempters were (much more than the control adolescents) subject to a process of progressive isolation from their parents. (p. 73)

To illustrate the process of the adolescent's attempts at adapting, the authors report that 30 of the total sample of 50 suicide attempters went through all the categories of "adaptive techniques" from rebelling, to withdrawing, to running away from home, to attempting suicide. In 27 of the 30, there was an attempt to utilize the first three least drastic behaviors before attempting suicide. By contrast, 13 of the 31 controls exclusively utilized rebellion, three controls and two attempters utilized withdrawal exclusively, and one attempter relied exclusively on running away while none of the controls did. This suggests that adolescents will generally attempt less drastic forms of adaptation before attempting suicide.

Broken homes. There is a great deal of research interest on the relationship between parental loss and adolescent parasuicide which will be considered in more detail later. As a starting point, the data reported by Jacobs (1971) will be considered.

Both the control and experimental groups had a high rate of parental loss through death, separation, or divorce, i.e., 71% of the suicide attempters and 53% of the control group. However, 40% of the parents of the experimental group remarried while only 25% of the controls did so. Additionally, the parents of the suicide attempters either remarried later in the adolescents life or married several times before the onset of their childs adolescence. By contrast, the parents of the controls typically remarried soon after the divorce and remained married. Since the onset of adolescence, 58% of the suicide attempters parents and only 10% of the control parents had divorced, separated, and/or remarried. The authors suggest these statistics indicate less stability in the homes of the suicide attempters, particularly during the escalation phase of the suicidal process.

Critique

One methodological weakness of this study is the absence of statistical analyses on several variables. A statistical analysis that incorporated significance levels could have easily been done, and the rationale for omitting this analysis, "that it was not a particular incident in the adolescents' lives that led them to attempt suicide; the nature, number, and ordering of events were the crucial factors" (Jacobs, 1971, p. 66), is not adequate. Furthermore, the presentation of the results actually focused on "particular incidents" as discriminative, but without the support of a statistical analysis. The consequences of this omission are not particularly debilitating as anyone with the inclination could have taken the percentages and perform a statistical analysis. However, a consumer of research data should not be expected to feel this inclination - probability levels should be reported by the authors of research. By contrast, significance levels were reported for the number and types of behavioral problems as well as number of disciplinary techniques, thereby providing legitimate evidence for group differences.

A more important methodological weakness involves the exclusion of nonsuicidal adolescents with psychiatric difficulties as a comparison group. The process Teicher and Jacobs identified should be able to discriminate between these two population to be clinically relevant. If there are no differences between suicidal and nonsuicidal teenagers that have psychopathology their findings have little practical utility.

Finally, this study is open to the possibility of a selection bias (a problem that plagues most of the research on adolescent suicide). While the experimental and control groups were closely matched on basic demographic variables, the volunteers that comprised the control group may have varied systematically from the population on other variables, as is possible with any self-selected group. The controls may have experienced increased family disruption or particular difficulties adjusting to adolescence making them more likely to volunteer for a "Study on Adolescence."

Despite these methodological problems Teicher and Jacobs made an important contribution to the literature on adolescent suicide. While the statistical significance of some of their comparisons is uncertain, the attempt to integrate what on the surface might appear to be fragmented findings into a meaningful conceptual whole goes well beyond the typical piece of research on this topic. What remains to be seen is the degree the subsequent 20 years of research substantiates, disqualifies, and extends their findings.

History of Problems

Teicher and Jacobs (1966) maintain that suicidal adolescents have a long-standing history of problems, laying the foundation for adaptive difficulties with the onset of adolescence. However, as suggested above, this hypothesis is difficult to defend from their data because we don't know how they compare to other psychiatric groups. Additionally, they indicate there is a small difference between suicidal and nonsuicidal adolescents during their childhood years, casting doubt on this hypothesis. That is, if there is a negligible difference between suicidal and nonsuicidal adolescents in terms of the life stresses experienced during childhood, an assertion of a "long-standing history of

problems" can hardly be maintained. An investigation into the stressful life events, with an adequate statistical analysis and psychiatric comparisons groups is necessary to determine both the validity of this hypothesis and any discriminative factors.

Cohen-Sandler, Berman, and King (1982) addressed this issue in a study that, among other things, compared the life events, experiences, and symptomatology of 76 children between 5 and 14 years of age from an inpatient psychiatric unit. Three groups of subjects were formed and compared based on stringent criteria: (a) suicidal; (b) depressed, nonsuicidal; and (c) psychiatric controls. The suicidal group had engaged in potentially destructive behavior and verbalized the intent to inflict harm or kill themselves. The depressed, nonsuicidal group had not engaged in suicidal behavior and was diagnosed using specific descriptors found to be associated with childhood depression. The psychiatric control group included those who were psychiatrically hospitalized but did not meet the criteria for the suicidal or depressed group.

Biological, social adjustment, and family history variables were examined as part of the Life Stress Inventory which focused on the developmental history of the subjects. The data was obtained from medical charts and recorded according the developmental period: (a) Infancy (birth to 1 year 5 months); (b) Preschool (1 year, 6 months to 4 years, 5 months); (c) Early Childhood (4 years, 6 months to 8 years, 5 months); and (d) Later Childhood/Early Adolescence (8years, 6 months to 14 years 11 months). Separate events were also recorded for the 12 months preceding admission. In addition, the Social Readjustment Scale for Children was administered retrospectively to determined the amount of stress experienced during each of the four periods, 12 months prior to admission, and the entire life span.

An analysis of variance performed on the four developmental periods indicated a trend in which the suicidal group experienced increased stress as they matured, although this was not significant until later childhood and early adolescence. However, the total stress over the lifespan was significantly greater for the suicidal than either the depressed

or control group ($p < .005$). Chi-square analyses of specific life events revealed discriminative events for the three subject groups within each developmental period. During infancy and the pre-school years the suicidal group was more likely to experience a new adult (usually a maternal grandmother) in the home ($p < .005$). The suicidal and depressed groups typically remained in the home however, in contrast to the psychiatric controls who experienced significantly more separations from their parents ($p < .02$ during infancy and $p < .01$ during the pre-school years). Through early childhood the suicidal group was more likely to experience the birth of a sibling ($p < .005$), divorce of parents ($p < .05$), and a medical hospitalization of a parent ($p < .06$). The depressed group was more likely to experience a school failure ($p < .01$). The results for early adolescence and the 12 months prior to admission will be discussed in later portions of this paper.

These results generally corroborate the Teicher and Jacobs (1966) findings that indicated a history of long–standing problems. It must be noted however, that these two studies are not equivalent in terms of subject selection and comparison groups. The Cohen–Sandler study utilized depressed nonsuicidal and psychiatric controls for comparison purposes and combined adolescents with latency age children. However, the results are strikingly similar to the trend Teicher and Jacobs noted, i.e., life stress for suicidal adolescents increases significantly with the onset of adolescence but does not differ from that experienced by other children during the early childhood years. Furthermore, this trend differentiates suicidal youngsters from those with emotional disturbances, extending discriminative characteristics beyond the Teicher and Jacobs (1966) comparison to normals. This is an important methodological improvement that confirms the notion of a long-standing history of problems.

Cognitive Functioning

Other variables have also been found to suggest a history of long-standing problems in suicidal adolescents. In a study examining 30 suicide attempters from age 13

to 15 within a delinquent population, Miller, Chiles, and Barnes (1982) found a greater likelihood of childhood hyperactivity in suicidal as opposed to nonsuicidal delinquents ($p < .10$).

Corder, Shorr, and Corder (1974) compared 11 inpatient adolescents with a history of suicide attempts to 11 other adolescents with no history of suicidal behavior admitted to the hospital during the same time. The data was drawn from psychological testing, social history information, and a structured patient interview. They also found that suicidal adolescents were often described as hyperactive during infancy and childhood, and more likely to have a history of poor impulse control and a high activity level ($p < .005$).

Based on observations from previous research, Kenny, Rohn, Sarles, Reynolds, and Heald (1979) designed a study to explore the presence of learning disabilities in a group of inpatient adolescents admitted after a suicide attempt. The subjects included 18 suicidal teenagers age 11 to 18 and a control group of 21 adolescents from a general medical clinic that had no history of suicidal behavior . The Bender Visual-motor Gestalt Test and Canter Background Interference Procedure was administered to assess the presence of neurologic dysfunction and learning disability. The results showed that the suicide attempters were more likely to display a pattern indicating visual-motor problems that are often associated with a learning disability and/or neurologic dysfunction ($p < .02$). In addition, the experimental group had a history of school behavioral problems ($p < .01$) and a higher probability of failing at least one grade ($p < .10$).

The data from these studies suggests that suicidal adolescents are more likely to have a history of cognitive dysfunction, providing further support for a history of long–standing problems. Furthermore, there is evidence indicating that children with learning problems and hyperactivity have significant social and emotional difficulties that are carried through into adolescence (Wiess, Minde, Werry, Douglas, & Nemeth, 1971) that isolate them from their peers.

Parental Loss

Teicher and Jacobs (1966) reported a high rate of parental loss through death, separation, or divorce in their sample of suicide attempters. As part of the larger picture of family functioning and the impact parental loss might have on the child prone to attempt suicide, this variable has received a great deal of attention in the research literature. Unfortunately, only a few studies have incorporated control groups.

Stanley and Barter (1970) compared the history of parental loss through death, separation, divorce, or adoption between two groups of hospitalized adolescents. The experimental group consisted of 38 adolescents admitted because of a suicide attempt. The control group, matched for age and sex, included psychiatrically ill adolescents with no history of suicidal behavior. The results indicated no difference between groups in the overall incidence of parental loss, but the suicidal group had a higher incidence when the loss occurred before the age of 12 ($p < .02$). There were no significant differences regarding the type of loss in this sample.

The nature of parental loss was refined further by Crook and Raskin (1975) who compared 115 depressed inpatients with a history of suicidal behavior to 115 nonsuicidal depressed patients and 285 normal subjects. Parental loss was defined as the separation of the child from one or both natural parents before the age of 12 through either death, desertion, divorce, or separation. The comparison groups were chosen with the intention of determining whether the association between parental loss and suicidal behavior might be an artifact of the often noted relationship between parental loss and depression. Suicidal individuals were found to have experienced parental loss through divorce, desertion, or separation significantly more ($p < .01$) than either severely depressed or normal subjects. However, the incidence of parental death was identical (10%) for all three groups. This finding disproves a primary association between parental loss and depression in suicide attempters and provides more specificity regarding the type of parental loss that may be discriminative, i.e., desertion, separation, and divorce. These

variables also imply more disruption and instability in the families of those prone to suicidal behavior, as Teicher and Jacobs (1966) have intimated.

The research evidence to date confirms a history of long standing problems beginning in the childhood year of adolescents who attempt suicide. This is manifest in a trend of increasing problems as the child matures in addition to specific problems. These problems include the loss of a parent through desertion, separation, or divorce, and a greater likelihood of childhood hyperactivity and visual-motor learning disabilities.

Escalation

While the research substantiates a history of greater emotional, social, and cognitive difficulties for suicidal adolescents during childhood than that experienced by either normal or psychiatrically ill teenagers that have no suicidal history, Teicher & Jacobs (1966) hypothesized that this escalates with the onset of adolescence.

Cohen–Sandler et al. (1982) noted a tendency for suicidal children to experience more stress as they matured, reaching significance by late childhood and early adolescence ($p < .025$). This trend differentiated suicidal youngsters from depressed nonsuicidal, and nonsuicidal adolescents with other psychiatric diagnoses. In addition, certain events distinguished the subjects that had attempted suicide from these two comparison groups during late childhood/early adolescence. These included the birth of a sibling ($p < .02$), the death of a grandparent ($p < .01$), the hospitalization of a parent ($p < .05$), the separation of their parents ($p < .05$), the divorce of their parents ($p < .02$), the remarriage of a parent ($p < .005$), and a broken home ($p < .005$).

Recalling the data of Jacobs (1971), these findings validate his observation that for suicidal adolescents, family disruption in the form of separation, divorce, and remarriage not only continues but escalates with the onset of adolescence. The implications for the teenager are increased stress and potentially greater isolation from the most meaningful of all relationships during this developmental period, i.e., with their parents. Corroborative data is also found in the Stanley and Barter (1970) study mentioned above. While there

were no differences between their suicidal and nonsuicidal psychiatric control sample in the frequency of family conflict, the content was significantly more likely to focus on threats of divorce and/or separation ($p < .05$).

Drawing from a nationwide study of 3000 patients ages 12 to 18 from 30 states and 74 public and private agencies, Marks and Haller (1977) identified a "treatment sample" of 830 emotionally disturbed adolescents who had either been referred or were being treated for adjustment problems. From this sample, a subsample of 16 boys who had attempted suicide were compared to 238 nonsuicidal boys, and 34 girls who had attempted suicide were compared to 128 nonsuicidal girls. In addition, a replication sample of 15 suicide attempting boys were compared to 237 nonsucidal boys, and 33 suicide attempting girls were compared to 129 nonsuicidal girls. The adolescent boys were more likely to have attended five or more schools between grades 7-12 ($p < .002$) and lack close relationships with male peers ($p < .001$). A theme of isolation was also manifest in the suicide attempting girls, who felt alienated from their fathers ($p < .002$) and did not "value" friendships ($p < .004$).

These studies confirm the notion of escalating problems with the commencement of adolescence, most typically in the interpersonal sphere. The teenager that may eventually resort to suicidal behavior not only has to cope with the heightening stresses associated with the difficult and varied developmental tasks of adolescence, but must also contend with the disruption of family attachments and isolation from peers. As these problems multiply, the adolescent's coping abilities become depleted and taxed, laying the groundwork for the ultimate option – suicide.

Coping and Increased Isolation

Caplan (1964) defines a crisis in the following manner:

> A crisis is provoked when a person faces an obstacle to important life goals that is, for a time, insurmountable through the utilization of customary methods of problem–solving. A period of disorganization ensues, a period of upset, during which many different abortive attempts at solution are made. Eventually some kind of adaptation is achieved which may or may not be in the best interests of that person or his fellows.

As seen through the eyes of crisis theory the suicide attempt is the culmination of increased stress in which previous coping mechanisms are no longer effective. While a particular event may precipitate various attempts to adapt , it is most often the culmination of a series of related incidents. It is a well known phenomenon in crisis theory and treatment that individuals will generally utilize their armamentarium of coping behavior and only resort to other methods of adapting after customary means of dealing with stress fail (Jacobson, 1979). Teicher and Jacobs (1966) conceptualize the final stage leading up to the adolescent suicide attempt in similar terms: The usual means of coping proves ineffective, the adolescent becomes increasingly isolated from meaningful relationships, and the precipitant (usually a broken romance) is often the "last straw" in a long history of unsatisfactory interpersonal experiences. Precipitating events, coping behavior, and family functioning as intervening variables in the process of interpersonal isolation have been given some attention in the research literature.

Precipitating Events

In a descriptive study of significant factors related to adolescent suicide attempts, Tishler, McKenry, and Morgan (1981) found parental problems to be most common, followed closely by troubles with members of the opposite sex and school. Difficulties with siblings and peers were the least frequent and often a combination of these precipitants were cited.

In a comparison of the precipitating events for hospitalized adolescent who had attempted suicide with other psychiatrically hospitalized teenagers, Stanley and Barter (1970) found that arguments with a boyfriend, girlfriend, or parent did not discriminate the two groups. The authors made no distinction between these categories of events however, possibly accounting for the nonsignificant results. In addition, as they correctly observed, hospitalization for any reason almost always involves a crisis. Consequently, it is not necessarily the event in and of itself that "causes" a suicide

attempt; rather, other contextual variables that lead up to the final precipitant must be considered.

Hawton, Osborn, O'Grady, and Cole (1982) similarly found that problems with boyfriends, girlfriends, and physical health were evenly distributed between three groups of suicide attempters that had either acute, chronic, and chronic problems with a behavior disturbance. However, problems related to parents were more common with the two chronic groups.

Several findings of the Cohen–Sandler et al. study (1982) help broaden our understanding of the intensity and types of stress that provide the context for adolescent suicidal action. They found that in the 12 months prior to an attempt, the suicidal group experienced more stress than either the depressed or psychiatric control group ($p < .001$). Furthermore, particular events were discriminative during this time period. They included the death of a grandparent, hospitalization of a parent, separation of parents, divorce of parents, remarriage of a parent, and psychological trauma. Once again, family variables appear to be particularly influential.

Finally, Tishler and McKenry (1983), in a comparison of adolescent suicide attempters to nonattempters admitted to an emergency room, found that attempters experienced more overall stress than nonattempters ($p < .01$) based on the global severity index of the SCL-90 Brief Symptom Inventory. They also exceeded nonattempters in degree of anxiety, obsessive-compulsiveness, interpersonal sensitivity, depression, hostility, and psychoticism. Because of the correlational nature of this study, it is unclear whether the stress and symptoms were causal or a result of the suicide attempt. However, the previous findings discriminating stress levels for suicide attempters and other adolescents with psychiatric difficulties makes it reasonable to assume attempters would also experience more stress than normal adolescents.

These studies provide evidence for the notion of high levels of stress in the weeks and months leading up to a suicide attempt. Furthermore, it appears that suicidal

adolescents experience a greater degree of stress than depressed nonsuicidal, normal, and adolescents with other psychiatric problems. Finally, a greater likelihood of parent–child disturbance and problems with the opposite sex are the most common specific precipitating events leading up to a suicide attempt.

Interpersonal Isolation

Social Variables. It is in the important arena of peer relationships and school involvement that adolescents look for a sense esteem and belonging. It has been suggested that teenagers who attempt suicide have a profound sense of isolation from meaningful relationships. In adolescence peers are without doubt one of the most "meaningful" of all relationships. As such, it has been the topic of several investigations in the literature on suicide.

Studies comparing youngsters who attempted suicide and those with no psychiatric problems find significant differences in the level of isolation from peers (Teicher & Jacobs, 1966; Topol & Reznikoff, 1982). That is, suicidal teenagers are more likely to be isolated and experience interpersonal difficulty. However, when the comparison group involves nonsuicidal adolescents with psychiatric problems, the research is conflicting. Stanley and Barter (1970) and Corder et al. (1974) found no differences in social adjustment or isolation. Conversely, Topol and Reznikoff (1982) discovered in their sample that suicidal teenagers were significantly more likely to have more total peer problems and more serious peer problems than nonsuicidal, psychiatrically impaired youngsters. These conflicting findings may be an artifact of sex differences. For example, Triolo et al. (1984) found that females were more likely to feel alienated because of poor parental relations, while poor parental relations combined with peer isolation contributed to the alienation felt by males. The Stanley and Barter (1970) study included twice as many females as males, possibly influencing the lack of a significant finding on this variable because females are less likely to be either effected by or experience peer relationship problems. The lack of a significant finding by Corder et al.

(1974) may have been a function of the small sample (N=11 in each group). Unfortunately no data is given regarding the gender distribution of their sample. Finally, the data by Topol and Reznikoff indicating significant differences was based on a standardized instrument while the studies suggesting no differentiation between the suicidal and psychiatric group was drawn from interviews, a less reliable or valid source. These considerations seem to lend credence to the notion that suicide attempters experience more isolation and interpersonal problems with peers than nonsuicidal psychiatrically impaired or normal adolescents.

Family Variables. There have been an impressive number of studies in the adolescent suicide literature that consider the nature of family functioning. The families of adolescents who attempt suicide report and display more severe conflict than families who have children with no emotional or behavioral difficulties (Topol & Reznikoff, 1982; Triolo, McKenry,Tishler, & Blythe, 1984; Williams and Lyons, 1976). Utilizing different comparison groups, Stanley and Barter (1970) found no differences in the overall amount of parental conflict between hospitalized suicidal and nonsuicidal adolescents, although the nature of the conflict differed significantly. Specifically, conflict was typically associated with threats of separation or divorce. In a study with a similar sample Topol and Reznikoff (1982) also reported no differences in the total number of family problems, although "serious family problems" discriminated the two groups. Thus, it appears that on gross measures of overall family conflict there is little difference between suicidal and nonsuicidal psychiatric inpatients. However, the type and severity of conflict present does differ.

Triolo et al. (1984) compared family variables of suicide attempters and nonattempters on the basis of age and sex differences. The suicide attempt of the 12-15 year old was likely to be directly related to the parent-child relationship. The16-18 year old placed more emphasis on social relationships outside the family, which seemed to intensify any existing problems in the parental relationship. Although both male and

female suicide attempters experienced their mothers as strict, females also emphasized the importance of having their mother interested in and appreciative of them, as well as approving of their friends. There was also a high correlation between the poor parent–child relationship and a measure of alienation. In a further consideration of female suicide attempters, Cantor (1976) discovered a strong preference for maternal support, although they felt they could not rely on either parent and identified their parents as the major source of anger in their lives. Another finding in this study is pertinent to the question of isolation. The suicide attempter displayed a tendency to prefer to be with friends than alone, help others when they are in trouble, and an inability to control impulsiveness when frustrated. However, despite the fact that the attempters had a high need for affiliation and succorance, they exhibited a marked inability reach others. The combination of these two characteristics might easily lead to a profound sense of isolation.

It is possible that the teenager who attempts suicide has developed this means of coping through exposure to inadequate coping by their parents. The fact that the families of suicidal adolescents are more likely to have a history of mental illness and suicide (Garfinkel, Froese, & Hood, 1982; Teicher & Jacobs, 1966) as well as child abuse (Deykin, Alpert, & McNamarra, 1985) leads to the hypothesis that self-destructive tendencies might be passed from parent to child. Tishler and McKenry (1982) investigated the parents of suicide attempters, hypothesizing that there would be a greater likelihood of "parental negative self" as defined by low self-esteem, depression, suicidal ideation, anxiety and alcohol use. The results revealed that fathers of adolescents who had attempted suicide had significantly lower self-esteem and were more depressed than fathers of nonsuicidal teenagers. The mothers of the attempters were more likely to experience suicidal ideation and higher anxiety than nonattempter mothers. Both mothers and fathers of the attempters used more alcohol than the parents of the nonattempters. It is interesting to note that these relationships held only for the parents of daughters. This

could possibly be accounted for by the greater number of girls in the sample. Alternatively, as the authors note, it may be that girls are more sensitive to distress in the family, a finding that corroborates the relationships noted in the studies above. Of course this study does not directly measure the interactions between parent and child to provide substantive data confirming the transmission of poor coping and the parental characteristics may have been an effect, rather than a cause of the suicide attempt. Nevertheless, it does provide some evidence for the possibility of transmitted self-rejection from parent to child as one piece of the suicide puzzle.

There has been only one published study that directly observed the interactions of families with an adolescent who had attempted suicide. Williams and Lyons (1976) video taped standardized segments of interaction in families that had a daughter who had attempted suicide. The families were confronted with a hypothetical problem and asked to resolve it as part of a modified revealed difference technique. When compared to a normal control group the results revealed dysfunctional interaction patterns for the families with a suicidal member. This was manifest in a higher degree of conflict which resulted in fragmented and disorderly discussions, less clarity and efficiency, and low rates of mutual respect and constructive problem-solving. The authors noted a striking rigidity that is often associated with dysfunctional family interaction. This confirms the observation of impaired problem-solving capacity by other researchers (Levensen & Neuringer, 1971). In addition, there were higher levels of negative consequences as reinforcement contingencies and higher rates of hostile affect. In terms of the question of isolation from parents, the authors noted a significant tendency for the teenager who had attempted suicide to engage in conflictual interaction with their parents, but not their sibling. This confirms the notion of parent-child conflict with solid observational data and lends support to the hypothesis of isolation from meaningful relationships. With little or no modeling of effective conflict resolution and rigid problem solving styles, the suicidal adolescent may block alternatives, leading to the development of suicidal

behavior as a coping mechanism. Considering the conflict and hostility observed in these families, it is unlikely a teenager would feel anything but alienated and estranged.

While the research overwhelmingly indicates severe conflict between suicidal teenagers and their parents, the question of whether conflict translates into "isolation from meaningful relationships" remains. As noted, Triolo et al. (1984) correlated parent-child relationship difficulties with alienation. One may deduce from the findings of Cantor (1976) that a high need for affiliation and succorance from others and an inability to get it would lead to interpersonal isolation. Intuitively it seems probable that severe parental conflict would lend itself to isolation. A study by Wenz (1979) addresses this issue directly. This study correlated 18 independent variables for 200 adolescent suicide attempts with an index of alienation. Conflict with parents and communication problems with parents held a strong relationship with alienation ($p < .001$). A step-wise multiple regression analysis using alienation as the dependent variable also revealed social contact with peers and conflict with parents to maintain the strongest association with alienation. Indeed, it appears that a central factor influencing suicidal action in adolescence is isolation from meaningful relationships, in particular, isolation from parents and peers.

Coping Behavior

Teicher and Jacobs (1966) classified behavior problems as "adaptive techniques." Following the lines of crisis theory outlined above, adaptive techniques correspond to coping mechanisms . If the coping behavior, i.e., behavior problems, fail to make the intended changes more drastic means of dealing with stress will be used. It is the contention of Teicher and Jacobs that a suicide is attempted only as a "last resort" after all other available means of coping has failed. In their research rebellious behavior (sassiness, defiance) did not distinguish the suicide from the normal controls. However, withdrawal behavior defined as gloominess, running away from home, and general withdrawal was more common with the suicidal group. This finding is corroborated by Cohen-Sandler et al. (1982) who contend "in a context of intensely stressful, chaotic, and

unpredictable family events, children who otherwise felt incapable of making an impact on these circumstances seemed to use suicide as a means of interpersonal coercion or retaliation" (p. 184).

It has been suggested that suicidal adolescents have ingrained character traits that are manifest in impulsive behavior (Crumley, 1979). However, when psychiatric controls are used impulsivity does not appear to be discriminative (Mattsson, Seese, & Hawkins, 1969; Cohen-Sandler et al., 1982), except perhaps for boys (Marks & Haller, 1977). Finally, externally directed aggression has been found to discriminate suicidal from psychiatrically hospitalized and normal youth (Cohen-Sandler, 1982).

It appears that depressive symptoms and aggression are distinguishing marks of suicidal teenagers. The underlying theme in both these coping behaviors is readily apparent: anger, either directed inward or at others. To an adolescent who feels hopeless and impotent to change the escalating difficulties with peers and family, a suicide attempt may seem the only way communicate their plight.

Methodological Issues

There are several methodological problems that characterize the research literature on adolescent suicide in general. Foremost among these in the research I reviewed is the absolute lack of any attempt to differentiate the lethality of the suicide attempt and/or the intent to die. In any clinical assessment of a suicide attempt, a determination regarding the lethality of the method used and the intent to die contributes to decisions regarding the level of intervention, e.g., hospitalization, outpatient psychotherapy, etc. For instance, an individual who makes an attempt using a gun in a remote area is viewed and treated differently from the individual who superficially cuts their wrist and immediately contacts a potential rescuer. In contrast to a low-lethality attempt, a suicide attempt that is highly lethal might suggest a greater degree of hopelessness and depression (Dyer & Kreitman, 1984), more severe family problems, or differences on any number of variables discussed in this paper. Nevertheless, the published studies on adolescent parasuicide

ignore the possible differentiating features among individuals that utilize varying means of attempting suicide, thereby obscuring potentially important differences. It is surprising that a variable that is so central to clinical evaluation has been essentially ignored in the research. This is so despite the fact that the means by which a suicide is attempted and the probability of being rescued has in fact been quantified in an instrument that has considerable research potential (Weisman & Worden, 1972).

There is also a problem with external validity. Most studies used samples from state or county funded psychiatric or medical hospitals, limiting the generalizability of findings to the populations these institutions serve. In addition, it must be remembered that four times as many females attempt suicide as males, but approximately four times as may males actually take their lives. Thus, the research on adolescents who attempt suicide primarily characterizes females. This is illustrated by the fact that the composition of the samples in the studies reviewed in this paper invariably included two to three times as many females as males. In addition, the few studies that studied the sexes separately found significant differences. The consequence is that the bulk of the research on adolescent parasuicide may not be generalizable to males, or to those that actually complete suicide.

Finally, a note of caution regarding the prediction of suicide. While there are many features that reliably distinguish the suicide attempter from normal adolescents, these differences are less remarkable when the attempter is compared to youngsters with psychiatric difficulties that are not suicidal. The research seems to indicate it is matter of degree or severity on the variables that differentiates suicidal from nonsuicidal adolescents rather than any unique predictors. When this is combined with the statistical properties of a rare event such as suicide, there is a high probability of false positive identifications (Murphy, 1984). To illustrate, the percentage increase of completed suicide in adolescence can be deceiving because adolescent suicide is in fact a rare event (as is death by any means during this phase of life). In absolute numbers there were

1,239 reported suicides in the 15-24 year age group in 1960 and 5,239 in 1980. When considering the total population of adolescents these numbers are very small, such that each increase in absolute numbers leads to the dramatic percentage increases. Because adolescent suicide is such a rare event it is not feasible to quantify suicide prediction. However, as Berman and Carroll (1984) note, "statisitical prediction is not the same as clinical prediction" (p. 54). Clinically assessing risk within the context of an individuals unique history and symtomatology can make effective use of the correlates discussed in this paper. There are treatment considerations that go beyond the suicide issue and the opportunity to modify decisions regarding suicidal risk is available. There is also the problem of false positives, which may have serious consequences if the intervention is very intrusive. However, this is not as serious as falsely determining an individual will not attempt suicide only to later be sadly disproven.

Directions for Future Research

Extrapolating from the methodological difficulties mentioned above, it follows that studies should behaviorally define suicidality in terms of lethality and intent. As alluded to above, Weisman and Worden (1972) have developed an instrument that measures one aspect of lethality in their Risk–Rescue Rating. This provides a quantitatively sound means of discriminating the probability of the suicide being successful, which can be supplemented by an examination of the psychosocial context and personal intentionality. A separation of groups based on degrees of lethality will reduce the possible confounding influence of indiscriminately treating suicide attempters as a collective whole.

In addition, a broader variety of research settings needs to be utilized. There is evidence indicating important sex and age differences with suicidal adolescents and efforts should be made to study these groups separately. Furthermore, the temptation to generalize from studies of attempted suicides to completed suicides should be avoided.

The research on adolescent suicide has been entirely retrospective using cross sectional samples. While the nature of this phenomena prohibits experimental

manipulation, prospective or other types of longitudinal studies are desperately needed. Control groups should always be used to avoid equivocal results, and the comparison groups need to include a diversity of psychiatric diagnoses along with normals controls.

Finally, with few notable exceptions (e.g., Teicher & Jacobs, 1966; Cohen-Sandler et al., 1982) most of the research focuses on events immediately preceding the suicide attempt. This provides important information about precipitants, but gives little data about the etiology of suicidal behavior from a broader context. Prospective studies eliminate this problem, but retrospective studies could broaden their perspective to include the context of the subjects life history.

Summary and Conclusion

The causes and characteristics of suicidal behavior in adolescence are complex and multifaceted. In this review I have attempted to pull together the seemingly fragmented pieces of research into a meaningful whole that will clarify the motivational process of suicide in adolescence. The central hypothesis, initially posited by Teicher and Jacobs (1966), is that suicide is the outcome of progressive isolation from meaningful relationships that increases in severity during the teenage years. Specifically, the adolescent prone to suicidal action will likely have a long standing history of problems since childhood and experience an escalation of problems with the onset of adolescence above and beyond what would normally be expected. In the weeks and months preceding the suicide attempt isolation from both family and peers intensifies to the point that suicide is seen as the only alternative.

The research supports the notion of a long-standing history of problems. This not only differentiates suicide attempters from normal adolescents but also from nonsuicidal depressed younsters and those with other psychiatric problems. Specific discriminating variables include a greater likelihood of the loss of a parent through desertion, separation, or divorce - but not death. There is also a probability of visual-motor learning disabilities, hyperactivity, and a high level of psychosocial stress during childhood. With

the onset of adolescence a trend toward more overall stress, continued family disruption, and peer isolation has been substantiated. Adolescents who attempt suicide have poor problem–solving abilities and strong needs for affiliation but display a marked inability to get these needs met. Family and peer isolation continues in the weeks and months preceding the attempt as these younsters attempt to cope through withdrawal behavior and/or overt aggression. Precipitants of the suicide attempt have the theme of isolation from significant people as the most common events involve either a broken romantic relationship or severe conflict with parents.

While our understanding of the characteristics of suicidal adolescents has been remarkably expanded over the past two decades, the prediction of suicidal risk remains a difficult and hazardous endeavor. The nature of suicide makes it difficult to study adequately as correlational designs must be relied upon. It is hoped that the discriminating characteristics outlined in this paper will contribute to a more effective means of identifying and intervening with the younster that resorts to suicide as a means of coping. Indeed, prevention is our best hope and first line of defense against this tragic waste of youth.

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